REMARKS

In a telephonic interview with the Examiner on November 2, 2001, the proper form of response to the 102(e) rejection of claims 1-25 in view of the *Toland et al.* reference was to initiate an interference. Accordingly, these are the steps now being taken.

Newly presented claim 27 covers substantially the same patentable invention as recited in claim 1 of U.S. Patent 6,268,835. Claim 36 covers substantially the same patentable invention as recited in claim 14, claim 41 covers substantially the same invention as claims 28 and 31, and claim 42 covers substantially the same invention as claim 30. Newly presented claims 28-35, 37-40 and 43-45 cover the same patentable invention as claims 2-10, 15-18, 33-35. It is believed that an Interference should be declared on the following proposed counts.

PROPOSED COUNTS FOR INTERFERENCE

Count 1. A phased-array-of-reflectors antenna comprising:

a plurality of reflector antennas pointed toward a common direction, each comprising a reflector having a rim defining a polygonal geometric shape and each including a feed array disposed above the individual reflector;

each reflector antenna being disposed adjacent to at least one other reflector antenna in the plurality of reflector antennas to form a phased array antenna using the plurality of reflector antennas as phased array antenna elements so that the signal energy from the plurality of reflector antennas combines to form a beam.

Count 2. A phased reflector array antenna comprising:

a plurality of reflector antennas pointed toward a common direction each comprising a reflector and a feed array, the feed array disposed above the reflector, the reflector comprising a reflector surface having a periphery in the shape of a polygon and including rigid support posts located at corner points of the periphery, and wherein each reflector antenna is disposed adjacent to at least one other reflector antenna and wherein a portion of the periphery is shared with at least one other adjacent reflector antenna in the plurality of reflector antennas to form a phased array antenna using the plurality of reflector antennas as phased array antenna elements to form a communication beam.

Proposed count 1 corresponds to claim 27 of the subject application and comprises claim 1 of U.S. Pat. 6,268,835 in modified form. Claim 1 is modified by reciting that the rim of the reflector defines a polygonal geometric shape rather than a substantially circular shape.

Proposed count 2 corresponds to claim 41 of the subject application and comprises claim 28 of U.S. Pat. 6,268,835 in modified form. Claim 28 is modified by deleting the "drop ties" limitation and substituting therefor the "rigid support posts" limitation recited in claim 31 of '835.

The terms of the application claims 27 and 41, corresponding to counts 1 and 2 are supported in applicant's specification as follows.

Claim 27

Terms	Support
line 1 - phased array of reflector antenna	p. 5, line 24 (antenna assembly) and p. 8, line 14 (phased antenna system), Figs. 1 and 2
line 2 - plurality of reflector antennas	p. 5, lines 26 - 91 (reflector elements 22), Fig. 2
line 3 - reflector	p. 6, line 1 (parabolic reflector 24) Fig. 4A
line 3 - rim	p. 6, line 2 (perimeter 25) Fig. 4A
line 3 - polygonal geometric shape	p. 6, lines 1 and 2 (hexagonal outline), Fig 4A
line 4 - feed array	p. 6, lines 7 and 8 (feed array 34), Figs 4A and 5
line 8 - signal energy from the plurality of reflector antennas	p. 7, line 29 and p. 8, line 1 (all of the … individual reflectors produce a … pattern)
line 9 - form a beam	p. 8, lines 13-15 (The composite antenna pattern ….)

Claim 41

Terms	Support
line 1 - phased reflector array antenna	p. 5, line 24 (antenna assembly) and p. 8, line 14 (phased antenna system), Figs. 1 and 2
line 2 - plurality of reflector antennas	p. 5, line 26 - 91(reflector elements 22), Fig. 2
line 3 - reflector	p. 6, line 1 (parabolic reflector 24), Fig. 4A
line 3 - feed array	p. 6, lines 7 and 8 (feed array 34), Figs 4A and 5
line 4 - reflector surface	p. 6, line 10 (surface of the reflector 24), Fig. 4A
line 5 - rigid support posts	p. 6, line 5 (rigid post members 26), Fig. 4A
line 5 - reflector is disposed adjacent … one other reflector	p. 6, line 19 (contiguous reflector cells 22_1, 22_2 … 22_7), Fig. 4B
line 10 - communication beam	p. 8, lines 13-15 (composite antenna pattern)

Newly presented claims 27-45 are patentable over the cited references for the following reasons:

Applicant's effective filing date is less than three months later than the effective filing date of said patent. Accompanying this Amendment is a Declaration complying with 37 C.F.R. § 1.608(a).

Should the Examiner have any questions concerning the present request for an interference, he is respectfully requested to direct these to William L. Gates, Reg. No. 20,848, or the undersigned, at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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MARKED-UP VERSION OF AMENDMENT

In the Specification

The last full paragraph of page 5, beginning at line 19 and extending through page 6, line 6, has been replaced as follows.

--Referring now to the figures wherein like reference numerals refer to like parts throughout, Figure 1 depicts a space borne antenna system 10 including an X-band sub-system 12 and an L-band sub-system 14. The present invention is directed to the L-band sub-system 14, the details of which are shown in Figures 2-4. The L-band sub-system 14 comprises a relatively large inflatable antenna assembly 18 which includes a torus support structure 20 (Figure 2) which is, for example, 50 meters in diameter and supports 91 contiguous reflector super elements 22. A cross-section of the antenna assembly 18 taken along the lines 3-3 of Figure 2 is shown in Figure 3. Each reflector cell 22 as shown in Figures 3 and 4A includes a mesh-type parabolic reflector 24 having a hexagonal outline or perimeter <u>25</u>. The mesh reflector 24 is supported at its six corners by rigid post members 26 which when the antenna is deployed, stiffen the mesh reflector 24 as well back-up suspension cables 28 which form a web 30 and a set of drop lines 32 which act to pull the mesh-type reflector 24 into a parabolic shape.--

The first full paragraph on page 8 has been replaced as follows.

--Referring now to Figures 9A and 9B they are illustrative of the array steering mechanism where feed array 34 steers a super element beam

generated by feed array 37 in Fig. 9A to O° with time delay units also steering the array factor to O°. As shown in Figure 9A, the feed element of group 37 is centered in the feed element array 34. With no array factor steering being applied, an antenna pattern as shown in Figure 9B results. In Figure 9B, reference numeral 52 depicts the super element beam pattern generated by the selected feed element group 37. The composite antenna pattern of the entire phased array antenna system as shown in Figures 2 and 3 includes a main lobe 54, and pairs of side lobes 55. Array factor steering is indicated by the position of a pair of grating lobes 56 on either side of the main lobe 54.--

The last paragraph on page 9, line 26 through page 10, line 7, has been replaced as follows.

--Another method of reducing grating lobes 58 of the composite beam is to randomly select feed element groups about the optimum position as shown in Figures 15A, 15B and 15C where the configuration of the selected feed groups 37_a of feed array 34-1 is centered at 0°, while the feed groups 37_b and 37_c of feed arrays 34-1 and 34-2 as shown in Figures 15B and 15C are offset to the left and right relative to group 37_a. Such an arrangement would produce antenna patterns such as shown in Figure [15B] 15D, where the main lobe 54 of the composite pattern is located at 1.38° in elevation; however, the grating lobes 58 are significantly larger than those depicted in Figures 14B, being only 10dB down from the amplitude of the main lobe 54.--

In the Claims

New claims 27 - 45 have been added.